

What is Claimed is:

1. A light source, comprising:

a light head, comprising:

a tubular supporting frame having an interior space and a peripheral surface;

5 and

a luminary unit comprising one or more luminary elements provided on said peripheral surface for emitting light; and

a heat transfer arrangement for dissipating heat generated from said light head, comprising:

10 a heat sink;

a heat conductor having a sealed chamber which has a first portion positioned in said interior space of the supporting frame and a second portion extended to said heat sink; and

15 a cooling agent contained in said sealed chamber of said heat conductor, wherein said cooling agent is capable of being vaporized by said heat generated from said luminary unit and condensed by said heat sink so as to enable said heat to flow from said luminary unit towards said heat sink.

2. A light source, as recited in claim 1, wherein said heat conductor comprises an elongated tubular member concealing said sealed chamber therein to contain said cooling agent within said sealed chamber of said heat conductor.

3. A light source, as recited in claim 1, wherein said cooling agent is a liquid having a vaporization temperature lower than 100°C and higher than a room temperature.

4. A light source, as recited in claim 2, wherein said cooling agent is a liquid having a vaporization temperature lower than 100°C and higher than a room temperature.

5 5. A light source, as recited in claim 1, wherein said heat sink is positioned above of said supporting frame such that an upper portion of said heat conductor functioned as said second portion thereof to mount with said heat sink while a lower portion of said heat conductor functioned as said first portion thereof to couple with said supporting frame.

10 6. A light source, as recited in claim 2, wherein said heat sink is positioned above of said supporting frame such that an upper portion of said heat conductor functioned as said second portion thereof to mount with said heat sink while a lower portion of said heat conductor functioned as said first portion thereof to couple with said supporting frame.

15 7. A light source, as recited in claim 4, wherein said heat sink is positioned above of said supporting frame such that an upper portion of said heat conductor functioned as said second portion thereof to mount with said heat sink while a lower portion of said heat conductor functioned as said first portion thereof to couple with said supporting frame.

 8. A light source, as recited in claim 1, wherein said heat conductor further has a plurality of conduction channels spacedly provided on a surrounding wall of said sealed chamber, wherein said conduction channels are extended from said first portion of said heat conductor to said second portion thereof.

20 9. A light source, as recited in claim 2, wherein said heat conductor further has a plurality of conduction channels spacedly provided on a surrounding wall of said sealed chamber, wherein said conduction channels are extended from said first portion of said heat conductor to said second portion thereof.

25 10. A light source, as recited in claim 4, wherein said heat conductor further has a plurality of conduction channels spacedly provided on a surrounding wall of said sealed chamber, wherein said conduction channels are extended from said first portion of said heat conductor to said second portion thereof.

 11. A light source, as recited in claim 7, wherein said heat conductor further has a plurality of conduction channels spacedly provided on a surrounding wall of said

sealed chamber, wherein said conduction channels are extended from said first portion of said heat conductor to said second portion thereof.

12. A light source, as recited in claim 1, further comprising an electric adapter coupled with said light head and electrically connected to said luminary unit for connection with a conventional light bulb connector for electrically connecting with said power source via said light bulb connector.

13. A light source, as recited in claim 4, further comprising an electric adapter coupled with said light head and electrically connected to said luminary unit for connection with a conventional light bulb connector for electrically connecting with said power source via said light bulb connector.

14. A light source, as recited in claim 7, further comprising an electric adapter coupled with said light head and electrically connected to said luminary unit for connection with a conventional light bulb connector for electrically connecting with said power source via said light bulb connector.

15. A light source, as recited in claim 11, further comprising an electric adapter coupled with said light head and electrically connected to said luminary unit for connection with a conventional light bulb connector for electrically connecting with said power source via said light bulb connector.

16. A light source, as recited in claim 1, wherein said supporting frame integrally constructed as said heat conductor that said supporting frame is made as an elongated tubular member to form said interior space as said sealed chamber so as to contain said cooling agent within said interior space of said supporting frame.

17. A light source, as recited in claim 16, wherein an upper portion of said supporting frame functioned as said second portion of said heat conductor to mount with said heat sink while a lower portion of said supporting frame functioned as said first portion of said heat conductor, wherein said luminary unit is provided at said lower portion of said supporting frame to communicate with said cooling agent within said sealed chamber.

18. A light source, as recited in claim 17, wherein said cooling agent is a liquid having a vaporization temperature lower than 100°C and higher than a room temperature.

19. A light source, as recited in claim 17, wherein said heat conductor further has a plurality of conduction channels spacedly provided on a surrounding wall of said sealed chamber, wherein said conduction channels are extended from said first portion of said heat conductor to said second portion thereof.

20. A light source, as recited in claim 18, wherein said heat conductor further has a plurality of conduction channels spacedly provided on a surrounding wall of said sealed chamber, wherein said conduction channels are extended from said first portion of said heat conductor to said second portion thereof.

21. A light source, as recited in claim 16, further comprising an electric adapter coupled with said light head and electrically connected to said luminary unit for connection with a conventional light bulb connector for electrically connecting with said power source via said light bulb connector.

22. A light source, as recited in claim 20, further comprising an electric adapter coupled with said light head and electrically connected to said luminary unit for connection with a conventional light bulb connector for electrically connecting with said power source via said light bulb connector.

23. A light source, comprising:

one or more light heads for illumination; and

a heat transfer arrangement for dissipating heat generated from said light heads, comprising:

a heat sink positioning apart from said light heads;

a heat conductor having a sealed chamber which has one or more first portions extended light heads respectively and a second portion extended to said heat sink; and

a cooling agent contained in said sealed chamber of said heat conductor, wherein said cooling agent is capable of being vaporized by heat generated from said light heads and condensed by said heat sink so as to enable said heat to flow from said light heads towards said heat sink.

5 24. A light source, as recited in claim 23, wherein said heat conductor comprises an elongated tubular member concealing said sealed chamber therein and containing said cooling agent in said sealed chamber.

25. A light source, as recited in claim 23, wherein said cooling agent is a liquid having a vaporization temperature lower than 100°C and higher than a room
10 temperature.

26. A light source, as recited in claim 24, wherein said cooling agent is a liquid having a vaporization temperature lower than 100°C and higher than a room temperature.

27. A light source, as recited in claim 23, wherein said heat conductor further
15 has a plurality of conduction channels spacedly provided on a surrounding wall of the sealed chamber, wherein said conduction channels are extended from said first portions to said second portion of said heat conductor to enable said cooling agent flowing between said heat sink and said light heads.

28. A light source, as recited in claim 24, wherein said heat conductor further
20 has a plurality of conduction channels spacedly provided on a surrounding wall of the sealed chamber, wherein said conduction channels are extended from said first portions to said second portion of said heat conductor to enable said cooling agent flowing between said heat sink and said light heads.

29. A light source, as recited in claim 26, wherein said heat conductor further
25 has a plurality of conduction channels spacedly provided on a surrounding wall of the sealed chamber, wherein said conduction channels are extended from said first portions to said second portion of said heat conductor to enable said cooling agent flowing between said heat sink and said light heads.

30. A light source, as recited in claim 23, wherein each of said light heads comprises a tubular supporting frame having a peripheral surface and a luminary unit comprising one or more luminary elements provided on said peripheral surface connected to a power source for emitting light.

5 31. A light source, as recited in claim 24, wherein each of said light heads comprises a tubular supporting frame having a peripheral surface and a luminary unit comprising one or more luminary elements provided on said peripheral surface connected to a power source for emitting light.

10 32. A light source, as recited in claim 28, wherein each of said light heads comprises a tubular supporting frame having a peripheral surface and a luminary unit comprising one or more luminary elements provided on said peripheral surface connected to a power source for emitting light.

15 33. A light source, as recited in claim 29, wherein each of said light heads comprises a tubular supporting frame having a peripheral surface and a luminary unit comprising one or more luminary elements provided on said peripheral surface connected to a power source for emitting light.